

SUPPORT FOR THE AMENDMENT

Support for claim 10 is found on page 23 of the specification. Support for claim 11 is found on page 27, Table 1. Support for claim 12 is found on page 18, lines 1-6 of the specification. Support for claims 13 and 14 is found on page 17, lines 1-8 of the specification. Support for claims 15-16 is found beginning on page 15, line 15 through page 16, line 4 of the specification. Support for claim 17 is found on page 19, lines 22-24 of the specification. Support for claim 18 is found on page 20, lines 6-11 of the specification. Support for claim 19 is found beginning on page 20, line 19 through page 21, line 9 of the specification. Support for claim 20 is found on page 22, lines 14-15 of the specification. Support for claim 21 is found on page 17, lines 9-25 of the specification. No new matter would be added to this application by entry of this amendment.

Upon entry of this amendment, claims 1-21 will now be active in this application.

REQUEST FOR RECONSIDERATION

The claimed invention is directed to a hair cleansing composition.

Applicants wish to thank examiner Venkat for the helpful and courteous discussion held with their U.S. representative on October 9, 2007. At that time, applicants' U.S. representative argued that the mere disclosure of a pH regulator did not suggest the claimed pH range of from 1 to 4.5 and that improved penetration of the amphipathic amide lipid at the claimed pH range produced improved hair treatment performance. The following is extended to expand upon the discussion with the examiner.

Hair cleansing, such as shampooing, tend to damage the appearance of hair. Protecting bases added to shampoo compositions can sometimes be difficult to formulate such that the protecting base can be ineffectively delivered to the hair. Accordingly, hair cleansing compositions which are effective at delivering a protecting base to hair are sought.

The claimed invention addresses the problem by providing a hair cleansing composition comprising an amphipathic amide lipid, an anionic surfactant and an acid where the composition has a pH of from 1 to 4.5 at 25°C when diluted with water to 20 times the weight of said composition. Applicants have discovered that a pH of from 1-4.5 is effective for delivery of the amphipathic amide lipid to provide hair penetration and prevent irritation. Such a hair cleansing composition is nowhere disclosed or suggested in the cited prior art of record.

The rejection of claims 1-9 under 35 U.S.C. § 103(a) over Hoshino et al. (U.S. 6,685,953) or Hirano (U.S. 2003/0208858), Hirano (U.S. 2003/0215410), Hirano (U.S. 2003/0215416), Hirano (U.S. 2005/0095217) alone and in combination with Uchiyama et al. (U.S. 5,876,705) is respectfully traversed.

None of the cited references discloses or suggests a hair cleansing composition at a pH of from 1-4.5 as claimed.

Applicants note that each of the Hirano publications were filed with the U.S. patent office **after** the filing of Applicants' Japanese priority document JP 2002-375319 of December 25, 2002.

Specifically Hirano '858 was filed with the U.S. Patent Office on April 17, 2003. Hirano '410 was filed on April 18, 2003. Hirano '416 was filed on April 18, 2003. Hirano '216 was filed on October 29, 2003. Each of these dates is after December 25, 2002. In order to perfect applicants' claimed priority, applicants enclose herewith a certified English language translation of applicants' Japanese priority document JP 2002-375319. A certified copy of JP 2002-375319 was filed on December 24, 2003. Applicants respectfully request the full benefit of the priority to applicants' priority date.

The remaining references of Hoshino et al. alone and in combination with Uchiyama et al. fails to disclose or suggest a hair cleansing composition at a pH of from 1-4.5 as claimed.

The examiner cites to the disclosure of Hoshino et al. at column 7 of a pH regulator which could be used in a shampoo composition containing an amphipathic amide lipid as claimed. However, the reference fails to disclose or suggest the specific pH of from 1-4.5 as claimed. Moreover, there is **no specific pH regulator** disclosed in the passages of this reference cited by the examiner. As such the reference can not suggest the claimed pH range of from 1 to 4.5 as claimed.

*A pH Regulator Does Not Suggest A Specific pH*

Applicants respectfully submit that the mere disclosure of a pH regulator fails to disclose or suggest the specific pH of 1-4.5 as claimed, and that even an acidic pH regulator does not suggest the claimed pH of 1-4.5.

A pH regulator is merely used to adjust the pH of a composition. Acidic pH regulators lowering the pH, while basic pH regulators increasing the pH. There is no suggestion that the ultimate pH of the composition be either acidic or basic based on the mere disclosure of pH regulators.

Further, the pH of a composition will be typically be dependent on the concentration of pH regulator used. The attached passages from the 56<sup>th</sup> edition of the Handbook of Chemistry and Physics provides **evidence** on page D-135 that sulfuric acid, a suitable inorganic acid as described on page 17 of Applicants' specification, could have a pH ranging from 0.3-2.1 depending on the concentration of acid. More specifically, a 1 normal solution would have a pH of 0.3 while a 0.01 normal solution would have a pH of 2.1. As such, it is clear that an acidic pH adjusting agent does not suggest the claimed range of 1-4.5. As the

reference fails to disclose or suggest the claimed pH range of 1-4.5 or even an acidic pH regulator, the claimed invention is clearly not rendered obvious by this reference.

The secondary reference of Uchiyama et al. fails to cure the basic deficiencies of the primary reference.

This reference fails to disclose or suggest a pH of 1-4.5 and as such cannot render the claimed invention obvious in combination with Hoshino et al.

The examiner cites to the paragraph bridging columns 22-23 which cites the use of pH adjusting agents such as citric acid, succinic acid, phosphoric acid, sodium hydroxide and sodium carbonate. Such a laundry list of pH adjusting agents of **an acidic and a basic nature** makes clear the failure of the reference to suggest an acidic pH of from 1-4.5.

As the combined teachings of the two references fails to disclose or suggest a pH of from 1-4.5, the claimed invention is clearly not rendered obvious and accordingly withdrawal of the rejection under 35 U.S.C. § 103(a) is respectfully requested.

*Applicants Observe Improved Hair Treatment Performance Within the Claimed pH Range*

Further, applicants observe an improvement in hair treatment when the pH is within the claimed range of 1-4.5 as opposed to being outside the claimed range.

The examiner's attention is directed to the data appearing in Table 1 on page 27 of the specification which is reproduced below:

Table 1

(wt.%)

		Examples			Comparative Examples		
		1	2	3	1	2	3
(A)	Amphipathic amide lipid A	2	2	-	2	-	-
	Amphipathic amide lipid B	-	-	2	-	-	-
(B)	Sodium polyoxyethylene (2) lauryl ether sulfate	10	10	10	10	10	10
	Sodium lauryl sulfate	5	5	5	5	5	5
(C)	Lactic acid	1	-	1	1	1	-
	Malic acid	-	1	-	-	-	-
Others	Myristyl alcohol	1	1	1	1	1	1
	Cocoylmonoethanolamide	0.5	0.5	0.5	0.5	0.5	0.5
	Ethylene glycol distearate	1	1	1	1	1	1
	Cationized hydroxyethyl cellulose	0.3	0.3	0.3	0.3	0.3	0.3
	Cationized guar gum	0.5	0.5	0.5	0.5	0.5	0.5
	pH regulator (sodium hydroxide, citric acid)	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*
	Purified water	Balance	Balance	Balance	Balance	Balance	Balance
pH		3.5	3.5	3.5	5	3.5	6
Evaluation	Smoothness of hair	A	A	A	C	C	C
	Moist feeling of hair	A	A	A	C	C	C
	Physical property-recovering ratio of hair	A	A	B	C	C	C

\* An amount to adjust the pH

A comparison of Example 1 with Comparative Example 1, otherwise identical compositions but for the pH, illustrates evaluations of from 70-100 for the claimed invention as compared with less than 50 for the pH exceeding 4.5 (e.g., 5). Further, the evaluation for a composition in the absence of the amphipathic lipid with a pH of 3.5 (comparative example 2) was evaluated the same as the composition with the amphipathic lipid at a pH outside the claimed range. Further, a comparative composition with no lipid at a pH outside the claimed range formed with similar evaluations (comparative example 3).

In addition, applicants have conducted further experiments to demonstrate improved hair treatment evaluations for compositions with an amphipathic lipid at a pH within the claimed range as well as with different acid sources. The data is reproduced below:

Table A

(wt.%)

		Additional Examples					
		1	2	3	4	5	6
(A)	Amphipathic amide lipid A	2	2	2	2	2	2
(B)	Sodium polyoxyethylene (2) lauryl ether sulfate	10	10	10	10	10	10
	Sodium lauryl sulfate	5	5	5	5	5	5
(C)	Lactic acid	-	-	-	0.2	0.2	-
	Malic acid	-	-	-	-	-	0.2
	Glycolic acid	1	-	-	0.8	-	-
	Glutamic acid	-	1	-	-	-	0.8
	Phosphoric acid	-	-	1	-	0.8	-
Others	Myristyl alcohol	1	1	1	1	1	1
	Cocoylmonoethanolamide	0.5	0.5	0.5	0.5	0.5	0.5
	Ethylene glycol distearate	1	1	1	1	1	1
	Cationized hydroxyethyl cellulose	0.3	0.3	0.3	0.3	0.3	0.3
	Cationized guar gum	0.5	0.5	0.5	0.5	0.5	0.5
	pH regulator (sodium hydroxide, citric acid)	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*
	Purified water	Balance	Balance	Balance	Balance	Balance	Balance
pH		3.5	2.5	3.9	3.5	4.5	3.0
Evaluation	Smoothness of hair	A	A	A	A	A	A
	Moist feeling of hair	A	A	A	A	A	A
	Physical property-recovering ratio of hair	A	A	B	A	B	A

\* An amount to adjust the pH

Applicants have demonstrated the improved performance for a range of acid sources and concentrations.

Thus, through the selection of pH of 1-4.5 for an amphipathic lipid containing composition, applicants observe an improvement in hair treatment evaluation, which is not suggested in the cited references. Such evidence is offered as further evidence of the non-obviousness of the claimed invention.

Application No. 10/743,836  
Reply to Office Action of July 17, 2007

Applicants submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

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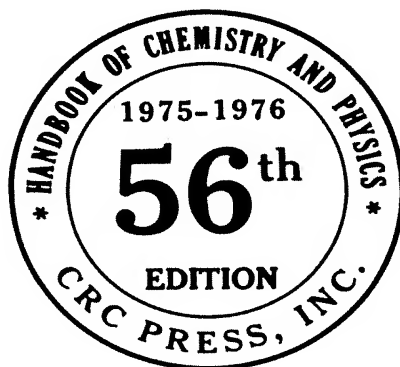
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# Handbook OF Chemistry and Physics

A Ready-Reference Book of Chemical and Physical Data



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In collaboration with a large number of professional chemists and physicists whose assistance is acknowledged in the list of general collaborators and in connection with the particular tables or sections involved.

*Published by*



18901 Cranwood Parkway • Cleveland, Ohio 44128



**BUFFER SOLUTIONS (Continued)**  
**STANDARD VALUES OF pH AT TEMPERATURE 0-95°C**

Temperature	Tetroxalate 0.05 molal	Tartrate 0.0341 molal (sat'd at 25°C)	Phthalate 0.05 molal	Phosphate <sup>a</sup>	Phosphate <sup>b</sup>	Borax 0.01 molal	Calcium hydroxide (sat'd at 25°C)
0	1.666	.....	4.003	6.984	7.534	9.464	13.423
5	1.668	.....	3.999	6.951	7.500	9.395	13.207
10	1.670	.....	3.998	6.923	7.472	9.332	13.003
15	1.672	.....	3.999	6.900	7.448	9.276	12.810
20	1.675	.....	4.002	6.881	7.429	9.225	12.627
25	1.679	3.557	4.008	6.865	7.413	9.180	12.454
30	1.683	3.552	4.015	6.853	7.400	9.139	12.289
35	1.688	3.549	4.024	6.844	7.389	9.102	12.133
38	1.691	3.548	4.030	6.840	7.384	9.081	12.043
40	1.694	3.547	4.035	6.838	7.380	9.068	11.984
45	1.700	3.547	4.047	6.834	7.373	9.038	11.841
50	1.707	3.549	4.060	6.833	7.367	9.011	11.705
55	1.715	3.554	4.075	6.834	.....	8.985	11.574
60	1.723	3.560	4.091	6.836	.....	8.962	11.449
70	1.743	3.580	4.126	6.845	.....	8.921	.....
80	1.766	3.609	4.164	6.859	.....	8.885	.....
90	1.792	3.650	4.205	6.877	.....	8.850	.....
95	1.806	3.674	4.227	6.886	.....	8.833	.....

<sup>a</sup> Solution 0.025 m  $\text{KH}_2\text{PO}_4$  and 0.025 m  $\text{Na}_2\text{HPO}_4$ .

<sup>b</sup> Solution 0.008695 m  $\text{KH}_2\text{PO}_4$  and 0.03043 m  $\text{Na}_2\text{HPO}_4$ .

**APPROXIMATE pH VALUES**

The following tables give approximate pH values for a number of substances such as acids, bases, foods, biological fluids, etc. All values are rounded off to the nearest tenth and are based on measurements made at 25° C. A few buffer systems with their pH values are also given.

From Modern pH and Chlorine Control, W. A. Taylor & Co., by permission

ACIDS			
Hydrochloric, N.....	0.1	Oxalic, 0.1N.....	1.6
Hydrochloric, 0.1N.....	1.1	Tartaric, 0.1N.....	2.2
Hydrochloric, 0.01N.....	2.0	Malic, 0.1N.....	2.2
Sulfuric, N.....	0.3	Citric, 0.1N.....	2.2
Sulfuric, 0.1N.....	1.2	Formic, 0.1N.....	2.3
Sulfuric, 0.01N.....	2.1	Lactic, 0.1N.....	2.4
Orthophosphoric, 0.1N.....	1.5	Acetic, N.....	2.4
Sulfurous, 0.1N.....	1.5	Acetic, 0.1N.....	2.9
BASES			
Sodium hydroxide, N.....	14.0	Lime (saturated).....	12.4
Sodium hydroxide, 0.1N.....	13.0	Trisodium phosphate, 0.1N.....	12.0
Sodium hydroxide, 0.01N.....	12.0	Sodium carbonate, 0.1N.....	11.6
Potassium hydroxide, N.....	14.0	Ammonia, N.....	11.6
Potassium hydroxide, 0.1N.....	13.0	Ammonia, 0.1N.....	11.1
Potassium hydroxide, 0.01N.....	12.0	Ammonia, 0.01N.....	10.6
Sodium metasilicate, 0.1N.....	12.6	Potassium cyanide, 0.1N.....	11.0
BIOLOGIC MATERIALS			
Blood, plasma, human.....	7.3-7.5	Gastric contents, human.....	1.0-3.0
Spinal fluid, human.....	7.3-7.5	Duodenal contents, human.....	4.8-8.2
Blood, whole, dog.....	6.9-7.2	Feces, human.....	4.6-8.4
Saliva, human.....	6.5-7.5	Urine, human.....	4.8-8.4
FOODS			
Apples.....	2.9-3.3	Gooseberries.....	2.8-3.0
Apricots.....	3.6-4.0	Grapefruit.....	3.0-3.3
Asparagus.....	5.4-5.8	Grapes.....	3.5-4.5
Bananas.....	4.5-4.7	Hominy (lye).....	6.8-8.0
Beans.....	5.0-6.0	Jams, fruit.....	3.5-4.0
Beets.....	4.0-5.0	Jellies, fruit.....	2.8-3.4
Beets.....	4.9-5.5	Lemons.....	2.2-2.4
Blackberries.....	3.2-3.6	Limes.....	1.8-2.0
Bread, white.....	5.0-6.0	Maple syrup.....	6.5-7.0
Butter.....	6.1-6.4	Olive oil.....	6.3-6.6
Cabbage.....	5.2-5.4	Milk, cows.....	6.3-6.8
Carrots.....	4.9-5.3	Olives.....	3.0-4.0
Cheese.....	4.8-6.4	Oysters.....	6.1-6.6
Cherries.....	3.2-4.0	Peaches.....	3.4-3.6
Cider.....	2.9-3.3	Pears.....	3.6-4.0
Corn.....	6.0-6.5	Peas.....	5.8-6.4
Crackers.....	6.5-8.5	Pickles, dill.....	3.2-3.6
Dates.....	6.2-6.4	Pickles, sour.....	3.0-3.4
Eggs, fresh white.....	7.6-8.0	Pimento.....	4.6-5.2
Flour, wheat.....	5.5-6.5	Plums.....	2.8-3.0
		Potatoes.....	5.6-6.0
		Pumpkin.....	4.8-5.2
		Raspberries.....	3.2-3.6
		Rhubarb.....	3.1-3.2
		Salmon.....	6.1-6.3
		Sauerkraut.....	3.4-3.6
		Shrimp.....	6.8-7.0
		Soft drinks.....	2.0-4.0
		Spinach.....	5.1-5.7
		Squash.....	5.0-5.4
		Strawberries.....	3.0-3.5
		Sweet potatoes.....	5.3-5.6
		Tomatoes.....	4.0-4.4
		Tuna.....	5.9-6.1
		Turnips.....	5.2-5.6
		Vinegar.....	2.4-3.4
		Water, drinking.....	6.5-8.0
		Wines.....	2.8-3.8